# *Demand, Supply, and Results for Postsecondary Career and Technical Education*

**March 2003**

Workforce Training and Education Coordinating Board
128 - 10th Avenue, S.W., P.O. Box 43105, Olympia, WA 98504-3105
(360) 753-5662/Fax (360) 586-5862
www.wtb.wa.gov email: wtecb@wtb.wa.gov

# WORKFORCE TRAINING AND EDUCATION COORDINATING BOARD

## The Vision

*The Workforce Training and Education Coordinating Board is Washington State's valued and trusted source of leadership for the workforce development system.*

## Mission Statement

The Workforce Training and Education Coordinating Board's mission is to bring business, labor, and the public sector together to shape strategies to best meet the state and local workforce and employer needs of Washington in order to create and sustain a high-skill, high-wage economy.

To fulfill this Mission, Board members, with the support of staff, work together to:

- Advise the Governor and Legislature on workforce development policy.
- Promote an integrated system of workforce development that responds to the lifelong learning needs of the current and future workforce.
- Advocate for the nonbaccalaureate training and education needs of workers and employers.
- Facilitate innovations in workforce development policy and practices.
- Ensure system quality and accountability by evaluating results and supporting high standards and continuous improvement.

## Board Members

René Ewing
*Chair*

Rick Bender
*Representing Labor*

Terry Bergeson
*State Superintendent of Public Instruction*

Don Brunell
*Representing Business*

Geraldine Coleman
*Representing Business*

Earl Hale
*Executive Director, State Board for Community and Technical Colleges*

Tony Lee
*Representing Targeted Populations*

John McGinnis
*Representing Labor*

Sylvia Mundy
*Commissioner, Washington State Employment Security Department*

Joseph J. Pinzone
*Representing Business*

Beth Thew
*Representing Labor*

***Participating Officials***

Dennis Braddock
*Secretary, State Department of Social and Health Services*

Vacant
*Representing Local Elected Officials*

Ellen O'Brien Saunders
*Executive Director*

# *Demand, Supply, and Results for Secondary Career and Technical Education*
# *Customer Satisfaction Survey*

*The Workforce Training and Education Coordinating Board is committed to high-quality customer satisfaction and continuous improvement. You can help us meet our commitment by completing this form, detaching it, and mailing it in. Please circle the words that best answer the following questions. In the spaces provided, please elaborate on your response.*

| | | | |
|---|---|---|---|
| 1. How useful is this document? | not useful | somewhat useful | very useful |
| 2. How clear is this document? | not clear | somewhat clear | very clear |
| 3. How is the information presented? | not enough detail | right amount detail | too much detail |
| 4. How is the length of the document? | too short | about right | too long |

5. Do you want additional copies of this document? Yes ___ Quantity ____ No ___

6. How did you expect to use this document? How have you used this document?

7. How can this document be made more useful in future editions? What additional information would you like to see in subsequent documents?

## Please Tell Us About Yourself

| JOB TITLE | SECTOR<br>Public ___ Private ___ Nonprofit ___ | YOUR ZIP CODE |
|---|---|---|

Does your organization provide training services to clients? Yes ___ No ___

Would you like to be contacted about future WTECB initiatives in this field? Yes ___ No ___

If we have any questions about what you have written here, may we contact you? Yes ___ No ___
*(If you answered "yes" to this question or question #7, please fill out the following.)*

| NAME | ADDRESS | |
|---|---|---|
| TELEPHONE # | FAX# | EMAIL ADDRESS |

FOLD HERE FIRST

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

# BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 267 OLYMPIA WA

POSTAGE WILL BE PAID BY ADDRESSEE

WORKFORCE TRAINING & EDUCATION
COORDINATING BOARD
PO BOX 43105
OLYMPIA WA 98599-3105

FOLD HERE SECOND

DO NOT STAPLE—SEAL WITH TAPE

# *The Gap Between the Supply and Demand for Postsecondary Workforce Education Customer Satisfaction Survey*

*The Workforce Training and Education Coordinating Board is committed to high-quality customer satisfaction and continuous improvement. You can help us meet our commitment by completing this form, detaching it, and mailing it in. Please circle the words that best answer the following questions. In the spaces provided, please elaborate on your response.*

| | | | |
|---|---|---|---|
| 1. How useful is this document? | not useful | somewhat useful | very useful |
| 2. How clear is this document? | not clear | somewhat clear | very clear |
| 3. How is the information presented? | not enough detail | right amount detail | too much detail |
| 4. How is the length of the document? | too short | about right | too long |

5. Do you want additional copies of this document? Yes ___ Quantity ____ No ___

6. How did you expect to use this document? How have you used this document?

7. How can this document be made more useful in future editions? What additional information would you like to see in subsequent documents?

## Please Tell Us About Yourself

| JOB TITLE | SECTOR<br>Public ___ Private ___ Nonprofit ___ | YOUR ZIP CODE |
|---|---|---|

Does your organization provide training services to clients? Yes ___ No ___

Would you like to be contacted about future WTECB initiatives in this field? Yes ___ No ___

If we have any questions about what you have written here, may we contact you? Yes ___ No ___
*(If you answered "yes" to this question or question #7, please fill out the following.)*

| NAME | ADDRESS | |
|---|---|---|
| TELEPHONE # | FAX# | EMAIL ADDRESS |

FOLD HERE FIRST

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 267 OLYMPIA WA

POSTAGE WILL BE PAID BY ADDRESSEE

WORKFORCE TRAINING & EDUCATION
COORDINATING BOARD
PO BOX 43105
OLYMPIA WA 98599-3105

FOLD HERE SECOND

DO NOT STAPLE—SEAL WITH TAPE

# *Introduction*

According to the Workforce Board's 2001 statewide survey of employers, 83 percent of firms that attempted to hire someone with a postsecondary vocational credential during the previous 12 months had difficulty finding qualified applicants. This shortage of vocationally trained workers affected more firms than were affected by shortages of other kinds of workers. These workers are prepared through the state's community and technical college system, apprenticeship, and private career schools.

This paper addresses two questions. First, in order to close this gap, how many more workforce education[1] students should the state's community and technical colleges enroll? Second, is workforce education at community and technical colleges a cost effective program?

[1] This paper uses the terms "vocational" and "workforce" interchangeably to refer to community and technical college programs that prepare students for jobs without transferring for a baccalaureate degree.

## Demand

Based upon data from the Labor Market and Economic Analysis unit of the Employment Security Department, there was a demand for **30,300 workers** with more than one year and up to but less than four years of postsecondary education or training during the 1999-2000 school year.[2]

## Supply

The supply of postsecondary training that is more than one year and up to but less than four years in length consists of community and technical colleges, private career schools, and apprenticeship programs. The supply includes students that complete a credential, and students that leave without a credential but that have completed at least a year of training. Figure 1 shows the number of new workers prepared by each of these three sectors, during the 1999-2000 school year.[3]

**FIGURE 1**

**1999-2000 Supply of Newly Prepared Workers**

| | |
|---|---|
| Community and Technical Colleges | 18,000 |
| Private Career Schools | 4,100 |
| Apprenticeships | 1,500 |
| Total Supply | 23,600 |

## Gap between Supply and Demand

Given a demand for 30,300 new workers and a supply of 23,600, there was a **gap of 6,700** workers during the 1999-2000 school year. In percentage terms, 78 percent of demand was met and 22 percent was not met.

## Future Demand

By the 2009-2010 school year, demand for new workers is projected to be **35,400 workers** (based on the forecasts of economic growth).

## Future Supply

If the supply of newly prepared workers keeps pace with the growth in the student-age population, by the 2009-2010 school year there will be a supply of **26,500 newly prepared workers**.

## Future Gap Between Supply and Demand

By the 2009-2010 school year, the gap between supply and demand for new workers is projected to increase to **a gap of 8,900 workers** if the supply only keeps pace with the growth in the student-age

[2] The number of job openings was slightly larger, but since some individuals hold more than one job, the United States Bureau of Labor Statistics suggests that the number of individuals needed is 90 percent of the number of job openings.

[3] The supply numbers are reduced by the labor force participation rates to reflect the fact that not all newly prepared workers actually enter the labor market.

population (see Figure 2). The reason that the gap will increase is that the student-age population will not grow as rapidly in the future as it has in the past. In order to prevent the gap from increasing, the percentage of the student-age population that completes workforce education (the participation rate) will have to increase.

## How Many More Students are Needed?

Given a gap of 8,900 workers between supply and demand by the 2009-2010 school year, how many more workforce education students are needed to close the gap (in addition to growth to match the growth in the student-age population)? The answer is far more than 8,900 students. Since many students leave school early or take remedial classes, it takes 3.02 Full-Time Equivalent (FTE) Students to produce one newly prepared worker.

Figure 3 shows the number of additional student FTEs that are required each year in workforce education between the 1999-2000 school year and 2009-2010 under different scenarios. As the table shows, the number of FTEs required can be reduced either by setting a goal of closing less than 100 percent of the gap, or by increasing the efficiency with which student FTEs are prepared as new workers.

It should be noted that the table shows the number of community and technical college workforce education student FTEs that are required. Only about half of student FTEs at the community and technical colleges are in workforce

FIGURE 2

**Gap Between Supply and Demand for Postsecondary Workforce Education if Current Participation Rates are Maintained**

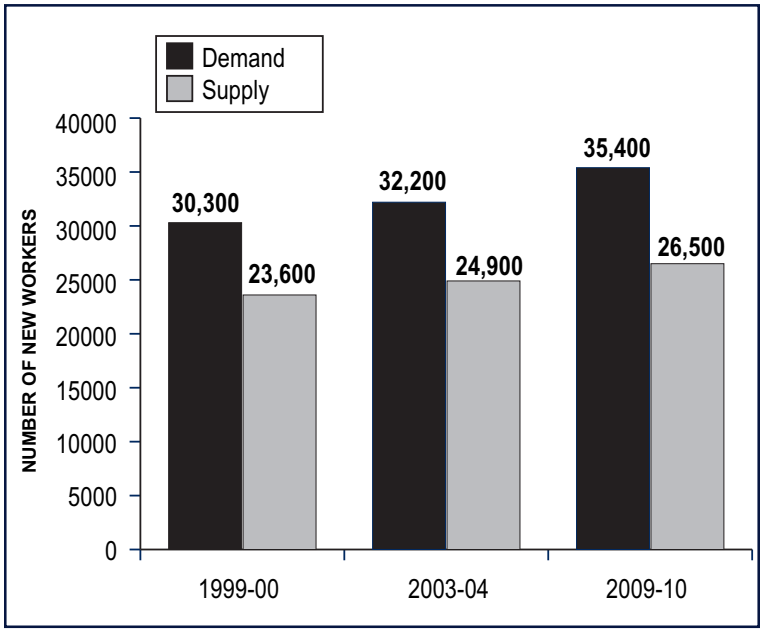


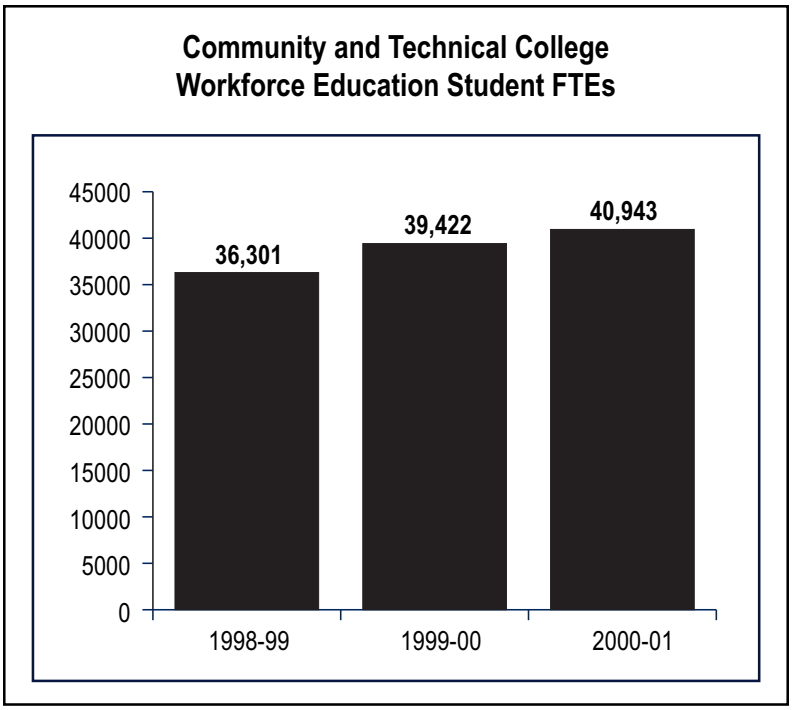

FIGURE 3

**Annual Workforce Student FTE Increases Required to Close the Gap Under Different Assumptions**

| Percent of Gap Closed by 2009-2010 | Extent of Efficiency Gain (percent reduction in FTE/Worker ratio) | |
|---|---|---|
| | NONE | 10 PERCENT |
| 100 percent | 2,700 Student FTEs | 2,000 Student FTEs |
| 75 percent | 1,900 | 1,400 |
| 50 percent | 1,200 | 700 |

education. The remainder are in adult basic skills education and academic programs preparing for transfer to baccalaureate institutions. Budget enhancements for the community and technical colleges, unless earmarked for workforce education such as line item funding for the Worker Retraining Program, would have to fund about twice as many student FTEs as shown in the table.

FIGURE 4




## Can this be Achieved?

In recent years, the community and technical colleges have substantially increased their student FTEs in workforce education programs. The size of the increases, as shown in Figure 4, has been in the mid to upper range of what is needed to close the gap by 2009-2010. Between the 1998-99 school year and 1999-2000, 3,121 student FTEs were added in workforce education. And, between 1999-00 and 2000-01, 1,521 student FTEs were added. In addition, during the past two years, the student FTE/worker ratio has decreased from 3.23 to 3.02, marking gains in efficiency. Such improvements in recent years have caused the ratio of supply to demand to increase from 75 percent to 78 percent.

Given budgetary pressures, however, the State will be hard pressed to maintain the recent level of increase in student FTEs during the coming biennium and beyond.

## Net Impacts of Postsecondary Workforce Education

In 2002, the W.E. Upjohn Institute for Employment Research conducted a net impact study of postsecondary workforce education and other workforce development programs for the state Workforce Board. Upjohn compared the post-college results for workforce education students with the results for individuals that registered with the state's Employment Service and who did not enroll in a workforce training program. The study statistically controlled for race,

ethnicity, gender, disability status, prior education, age, region of the state, preprogram earnings and employment history, unemployment insurance benefit receipt history, and preprogram receipt of public assistance.

As shown in Figure 5, Upjohn found that postsecondary workforce education is associated with strong positive net impacts on employment and earnings. The Figure shows the results for two programs: Job Preparatory Training and Worker Retraining for dislocated and other unemployed workers. The impacts are positive for all students, and even stronger for those that completed their program of study.

FIGURE 5

**Net Impacts of Postsecondary Workforce Education**
*(based on the third year after training)*

| | Employment Rate | Annual Earnings |
|---|---|---|
| **Job Preparatory Training** | | |
| All Students | + 7 percent | + $4,700 |
| Program Completers | +10 percent | + $6,100 |
| **Worker Retraining** | | |
| All Students | + 6 percent | + $1,700 |
| Program Completers | + 11 percent | + $2,200 |

## Postsecondary Workforce Education is Cost Effective

Upjohn also examined the financial benefits and costs of postsecondary workforce education for both students and the public (Figure 6). They looked at the differences between workforce students and the comparison groups in terms of earnings, employer provided benefits, and state and federal taxes. Upjohn estimated the differences between the students and the comparison groups during their working lives until age 65.

Job Preparatory Training costs the public $6,916 per student (not including financial aid). The average student pays $3,118 in tuition. From these investments, job preparatory students experience an average net increase in earnings and employer provided benefits of $114,141 during their working lives. Due to the

FIGURE 6

**Lifetime Benefits and Costs of Postsecondary Workforce Education Per Student and the Public**

| | Job Preparatory Training | | Worker Retraining | |
|---|---|---|---|---|
| | STUDENT | PUBLIC | STUDENT | PUBLIC |
| **Earnings** | $94,888 | | $51,771 | |
| **Fringe Benefits** | $19,253 | | $13,354 | |
| **Taxes** | -$24,210 | $24,210 | -$16,666 | $16,666 |
| **Program Costs** | -$3,118 | -$6,916 | -$2,133 | -$4,692 |

increase in earnings, the public will benefit from an estimated $24,210 in net increase in tax revenues from the state sales tax and federal income and payroll taxes. The expected net increase in tax revenues far exceeds the cost of the program.

Similarly, Worker Retraining costs the public $4,692 per student (again, not including financial aid). The average student pays $2,133 in tuition. Worker Retraining students experience an average net increase in earnings and employer provided benefits of $65,125 during their working lives. The public will benefit from an estimated $16,666 in net increase in tax revenues, far greater than the taxpayer cost of the program.

## Conclusion

This paper began with two questions.

1. In order to close the gap between supply and demand for workers with postsecondary training, how many more workforce education students should the state's community and technical colleges enroll?
2. Is workforce education at community and technical colleges a cost effective program?

In answer to the first question, if the gap between supply and demand for postsecondary training is to be closed by the end of this decade, the state's community and technical colleges must enroll between 2,000 and 2,700 more student FTEs per year in workforce education programs. And in answer to the second question, postsecondary workforce education enhances student employment and earnings and generates tax revenues that far exceed the cost of the programs.